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Watson has called this and another widely different form *G. inconspicua*, var. *sinuata*, but on comparing the two forms I see no similarity except in the size of the flowers.

Salt Lake City, Utah. MARCUS E. JONES.

§ 65. **Rondeletia (Rogiera) cordata,** of the conservatories, has a strong tendency to increase the number of parts of the flower. While it may be regarded as normally pentamerous, I have found in the same cluster, and almost as a constant thing, flowers with six, seven, or even more lobes to the corolla, accompanied by a corresponding increase of stamens. In the much-compounded cymes, fasciation is frequent, as many as three flowers often being fused together. The interior of the tube, the base of which is filled with nectar, has an admirable arrangement for protecting this from small insects. It is clothed with interlacing and *upward*-pointing hairs. High powers of the microscope show these to be moniliform. It is hardly conceivable that an ant could pass them.

Brown University, April 21, 1881. W. W. BAILEY.

§ 66. **Plant-Stations Wanted.**—I would like to learn through the BULLETIN or otherwise, the extreme northern limits of the following plants: *Pinus Taeda*, L., *Juncus maritimus*, Lam., and *Zanthoxylum Carolinianum*, Lam. I would be pleased also to learn the southern limits of the following plants: *Xanthium strumarium*, L., *Draba verna*, L., *Trifolium procumbens*, L., *Cakile maritima*, Scop., and *Salicornia mucronata*, Lag.? All the foregoing plants grow in this county; the first two being especially abundant and probably extending far north of this place.

Messongo, Accomac Co., Va. ELLIS MEARS.

§ 67. **Botanical Literature.**—*The Gymnosporangia or Cedar-Apples of the United States.* By W. G. Farlow. (From the Anniversary Memoirs of the Boston Society of Natural History. 1880. 4to, pp. 38, with two plates). This interesting memoir is the outcome of some comparatively recent researches made by Prof. Farlow on the species, as represented in the United States, of *Gymnosporangium*, one of the genera of the *Pucciniaei.* The species of this genus of fungi, popularly known as "cedar apples," are comparatively few, and their development was first studied by Oersted, of Copenhagen, who traced a connection between them and the species belonging to the genus *Roestelia.* Oersted's observations having been subsequently confirmed by De Bary, Cornu, Cramer and others, the old genus *Roestelia* was suppressed, and what were formerly regarded as species are now usually referred to as the aecidial or hymeniferous stages of different *Gymnosporangia.* Oersted even went so far as to announce that he had succeeded in connecting genetically each of three species of *Gymnosporangium* with a particular species of *Roestelia.*

Prof. Farlow having determined to ascertain, if possible, whether our species of *Gymnosporangium* likewise could be genetically connected with our species of *Roestelia*, it became necessary, in order that any experimental cultures that might be made should prove satisfactory and of value, that the limits of the species of both genera should first be well defined. The greater part of his memoir, therefore, is devoted to an account of the morphological characters of the United States species of the two genera. As a result of his studies in this direction, the author recognizes the following species of *Gymnosporangium* (in which he includes *Podisoma*) ; *G. Ellisii* (Berk.), *G. clavariaeforme*, DC., *G. fuscum*, var. *globosum*, Farlow, *G. biseptatum*, Ellis, *G. clavipes*, C. & P., and *G. conicum*, DC. Of *Roestelia* he recognizes the follow species : *R. botryapites*, Schw., *R. transformans*, Ellis, *R. cancellata*, Rebent, *R. cornuta*, Fr., *R. lacerata*, Fr., *R. penicillata*, Fr., *R. hyalina*, Cke., and *R. aurantiaca*, Pk. It thus appears that we have eight species in each genus, or, throwing out *G. conicum* (as to the occurrence of which in this country the author is skeptical) and uniting, as is done by many botanists, *R. lacerata* and *R. penicillata*, we have seven species of each.

Having determined these facts, Dr. Farlow undertook, during the springs of 1876, 1877, 1878 and 1880 a series of cultures of *Gymnosporangium* spores on the leaves and young plants of such Pomeae as are usually attacked by *Roesteliae* ; selecting for his experiments the species *G. macropus*, *G. fuscum*, var. *globosum*, *G. biseptatum* and *G. clavipes*. The results of these experiments are certainly not calculated to strengthen the faith of those who have relied on the accuracy of the Danish botanist's conclusions. The sowings were succeeded by spermogonia in a very small number of cases—on 10 leaves out of 126—and upon only two plants (*Amelanchier Canadensis* and *Crataegus tomentosa*) out of the seven chosen. Those on *Amelanchier* followed the sowing of *G. macropus*; but, since that plant supports three species of *Roestelia*, it was impossible to say to which one of these it belonged. The spermogonia which made their appearance on *Crataegus tomentosa* followed the sowing of three species of *Gymnosporangium*—*G. macropus*, *G. globosum* and *G. biseptatum*, yet not one of these is the species which, according to Oersted, ought to produce *R. lacerata*, which is our common form on *Crataegus*. Taking into consideration the results of these cultures, together with certain facts in regard to the distribution of our species, Prof. Farlow is led to the conclusion that, even granting the general correctness of Oersted's supposition that the *Roesteliae* are genetically connected with the *Gymnosporangia*, proof is as yet wanting to show the connection in the case of given species. Furthermore, if it should be shown, says the author in conclusion, that, as appears to be the case with *R. aurantia*, several of our *Roesteliae* are perennial—a fact true with regard to most of our *Gymnosporangia*—and that they grow in regions remote from species of *Juniperus* and *Cupressus*, then one could not help feeling that any connection between the two genera was probably accidental rather than genetic.

Whatever may be the result of future investigations into the genetic relationship of the two genera here monographed, botanists are to be congratulated, at least, that the opening of the question in the present instance, has resulted in giving them so valuable a contribution to the systematic portion of our mycological literature.